P-ISSN 2664-0422	Pakistan Social Sciences Review	April-June 2024, Vol. 8, No. 2 (S)
O-ISSN 2664-0430	https://doi.org/10.35484/pssr.2024(8-II-S)24	[281-290]

Pakistan Social Sciences Review
www.pssr.org.pk

RESEARCH PAPER

Assessment of Knowledge and Practice among Nurses for the Management of Pre-eclampsia in Pregnant Women: A Descriptive Study of Lahore General Hospital, Pakistan

[1]Abida Parveen, [2]Tabassam Zia* and [3]Zartasha Gul

1. Ph.D. Nursing Scholar, Department of Nursing, Mahsa University 42610 Jenjarom Kuala Langat Selangor, Malaysia
2. Ph.D. Nursing Scholar , Data Center of Post Graduate Studies Lincoln University, Malaysia
3. Charge Nurse, Punjab Institute of Cardiology, Lahore, Pakistan

***Corresponding Author:** tabassamzia686@gmail.com

ABSTRACT

This study aims to assess the level of knowledge and adherence to evidence-based practices among nurses in managing pre-eclampsia in pregnant women. Once preeclampsia is diagnosed, evidence-based interventions may reduce the risk or severity of maternal and infant health outcomes of preeclampsia. A descriptive study design was utilized and conducted at the obstetrical and gynecological department of the General Hospital, Lahore. Convenient sampling was used. Three tools were used for data collection: A self-administered questionnaire, an Observational checklist, and a Modified Likert scale. There were more than one-third of studied nurses(41.7%) had an average level of total knowledge, less than two-thirds of studied nurses (65%) had a satisfactory level, and more than half of studied nurses (53.4) had a high level of knowledge for the management of pre-eclampsia. It is recommended that nurses' awareness regarding pre-eclampsia be improved by involving them in educational programs to encourage them to participate in patients' daily care.

KEYWORDS Nurses' Knowledge, Pre-eclampsia, Pregnant Women

Introduction

Pre-eclampsia is considered one of the most common medical complications during pregnancy. Preeclampsia is diagnosed with systolic blood pressure ≥140 or diastole ≥90 and the presence of proteinuria with or without edema. Pre-eclampsia occurs after 20 weeks of pregnancy and affects about 5% to 8% of all pregnancies; when a seizure accompanies PE, it is called eclampsia. The prevalence of preeclampsia in developing countries has been reported to be 1.8%–16.8%. According to WHO, 2.3% of all cases of preeclampsia lead to eclampsia, and most of the deaths associated with preeclampsia were due to delayed diagnosis, improper management, and nursing care programs (Tabatabaeian et al., 2018).

Complications of eclampsia include cardiovascular disease, renal disease, cerebrovascular disease, and shortened life expectancy. Additionally, adverse fetal effects from PEE include intrauterine growth restriction, small for gestational age, respiratory distress syndrome, transient tachypnea of the newborn, anemia, apnea, asphyxia, prior intraventricular hemorrhage, cardiomyopathy, cerebral palsy and persistent pulmonary hypertension of the newborn. Furthermore, preeclampsia and eclampsia are leading causes of perinatal mortality (Thilaganathan & Kalafat, 2019).

Early detection, rapid response, accurate management, and timely delivery of women with preeclampsia with severe features and eclampsia reduce maternal and fetal complications and deaths. Nurses' knowledge and skills in the diagnosis and

management of these conditions are critical factors in maternal and neonatal morbidity and mortality (Angelina et al., 2020).

Nurses are the largest group of healthcare providers and have a key role in ensuring the promotion of healthcare and delivering better services. EBP is important to the professional development responsibility and capabilities of nurses, and it has become an important subject in nursing and has been integrated into daily practice. In addition, nurses who have based their practices on scientific evidence provide their clients and organizations with better and more cost-effective nursing care than those who do not base their practice on EBP (Ellboudy et al., 2018).

Literature Review

Research has consistently shown that nurses' knowledge and practice regarding pre-eclampsia management in pregnant women is inadequate, with significant gaps in diagnosis, treatment, and complications (Adebayo & Adeoye, 2022; Al-Mutairi & Bello, 2020; Oche & Adamu, 2019; Shah & Kulkarni, 2018).

A systematic review of 20 studies found that nurses' knowledge of pre-eclampsia management was generally poor, with deficiencies in understanding of its pathophysiology, risk factors, and clinical manifestations (Adebayo & Adeoye, 2022).

Another study conducted in Saudi Arabia found that only 30% of nurses had adequate knowledge of pre-eclampsia management, with significant gaps in knowledge of its diagnosis and treatment (Al-Mutairi & Bello, 2020).

Similarly, a study in Nigeria found that midwives' knowledge of pre-eclampsia management was inadequate, with only 40% having received training on its management (Oche & Adamu, 2019).

In India, a study found that nurses' knowledge of pre-eclampsia management was poor, with significant gaps in knowledge of its complications and management (Shah & Kulkarni, 2018).

These studies highlight the need for continuing education and training programs to improve nurses' knowledge and practice regarding pre-eclampsia management.

Material and Methods

Research Design: A descriptive research design was utilized to achieve the aim of the study.

Setting: The present study was conducted in the obstetrical and gynecological department at General Hospital, Lahore, Pakistan.

Sampling: A convenient sample was selected. : All nurses (60 nurses) working at the obstetrical and gynecological department.

Tools of Data Collection: Three tools were used for data collection prepared by the researcher.

Tool 1: A self-administered questionnaire consists of two parts.

Part 1: General characteristics of the studied sample such as (age, level of education, experience years, and received training programs about the utilization of evidence-based practice for caring for pregnant women with preeclampsia).

Part 2: Assessment of studied nurses' knowledge regarding evidence-based applying for preeclampsia cases through items was written in simple Arabic language and in the form of multiple choice questions for assessing the nurses' knowledge through the following sections:

Section 1: Knowledge regarding evidence-based that apply to preeclampsia consists of (6) items (definition of EBP, steps of EBP, importance of EBP, EBP for caring for women with preeclampsia, EBP given for women with preeclampsia, and EBP to protect women from preeclampsia).

Section 2: General knowledge about preeclampsia consists of (9) items (definition of preeclampsia, degree of preeclampsia, risk factor of preeclampsia, signs and symptoms of preeclampsia, danger signs for women with preeclampsia, complications of preeclampsia, tests that confirm preeclampsia, times of visits for women with preeclampsia, and medications that are given to women with preeclampsia.

Section 3: Knowledge about HELLP syndrome consists of (3) items (definition of HELLP syndrome, signs and symptoms of HELLP syndrome, and management for HELLP syndrome).

Section 4: Knowledge about magnesium sulfate consists of (9) items (the loading dose of magnesium sulfate, maintenance dose of magnesium sulfate, precautions to be followed while giving magnesium sulfate, the most common side effect of magnesium sulfate, symptoms of magnesium sulfate toxicity, the antagonist used in case of magnesium sulfate toxicity, respiratory depression is a concern when blood levels of magnesium sulfate reach.

Scoring System: Each item was assigned a score of (2) when the answer was entirely correct, a score of (1) when the answer was incompletely correct, and a score of (0) when the answer was not known.

The score of total knowledge was classified as follows:

- Good :(<75%)
- Average: (60 - > 75%).
- Poor: (> 60%).

Tool 2: Observational List: It was used to assess evidence-based nursing practice regarding the management of preeclampsia. Each statement scored as follows: (1) if done and (0) if not done. The score of total practices was classified as follows:

- Satisfactory level:≤ 60%
- Unsatisfactory: > 60%

Tool 3: Modified Likert Scale: This scale consists of (10) items (Lack of nurses and medical team regarding the number of cases, Lack of capabilities and tools in hospital, not attending the training courses, little information is available on EBP, there is a lack of technology in the field of nursing, sources of access to evidence-based practices are limited, nurses are unable to read and analyze evidence-based research, nursing

resistance to change, insufficient support for nurses, and Lack of time) with (3) points (agree, uncertain, disagree).

Scoring System: Each item scored as (2) if awareness was agreed, (1) if it was uncertain, and (0) if it was disagreed. The score of total awareness about barriers:

High: (<75%)
Moderate: (60 – 75 %).
Low: (> 60%)

Reliability: It was measured using Cronbach's Alpha , which indicated that the reliability for knowledge was 0.71, reliability for practices was 0.83, and reliability for barriers was 0.68.

Ethical Considerations: To gain their confidence and trust, each nurse explained the study's aim before they applied the tools.

Statistical Analysis: Data were verified prior to computerized entry. The Statistical Package for Social Science (SPSS version 20.0) was used. Descriptive statistics were applied as mean and standard deviation for quantitative variables. Qualitative categorical variables were compared using the chi-square test. The Pearson correlation coefficient was calculated to estimate the closeness association between variables. The p-value is the degree of significance using the correlation (r) test. The p-value is the probability that an observed difference is due to chance, not a true difference. A significant level value was considered when p-value < 0.05, and a highly significant level value was considered when p-value < 0.001, while p-value > 0.05 indicates non–significant results.

Results and Discussion

Table 1
Frequency distribution of studied nurses regarding their socio-demographic characteristics (n=60).

Socio-demographic characteristic	No	Percent
Age		
>20-30	34	56.7
>30	26	43.3
Mean ±SD	32.45±9.68	
Education level		
Diploma	19	31.7
technical Institute	37	61.7
Bachelor	4	6.7
Years of experience		
< 5	17	28.3
5-10	18	30.0
> 10	25	41.7
Training courses		
Yes No	28	46.7
	32	53.3
If yes (n=28). In your filed of work		
Yes	19	59.4
No	13	40.6

Marital status		
Single	4	6.7
Married	53	88.3
Divorced	3	5.0
Number of nurses in shift		
>3	24	40.0
<3	36	60.0
EBNP could be applied easily in the field of nursing care		
Yes	14	23.3
No	46	76.7

Table 1 shows that more than half of the studied nurses (56.7%) were in the age group 20-30 with a mean age of 32.45±9.68 years. Regarding educational level, less than two third of studied nurses (61.7%) had technical institutes. In addition, more than one-third of the study nurses (41.7%) had more than ten years of experience. Concerning training courses, more than half of the studied nurses (53.3%) had not attended training courses, and of these nurses, less than two-thirds (59.4%) hadn't attended courses in their field of work. Most of the studied nurses (88.3%) were married. Regarding the application of EBP more than three quarters (76.7%) of studied nurses did not agree that EBP could be applied easily in the field of nursing care.

Table 2
Frequency distribution of studied nurses regarding their knowledge about evidence-based practice (EBP)

Knowledge items	Complete Correct		incomplete Correct		I do not know	
	No	%	No	%	No	%
Definition of EBP	2	3.3	37	61.7	21	35.0
Steps of EBP	2	3.3	30	50.0	28	46.7
Importance of EBP application	1	1.7	29	48.3	30	50.0
EBP for caring for women with preeclampsia	25	41.7	31	51.7	4	6.7
EBP is given to women with preeclampsia	28	46.7	32	53.3	0	0.0
EBP to protect women from preeclampsia	39	65.0	21	35.0	0	0.0

Table 2 indicates that less than two-thirds of studied nurses(61.7) had incomplete correct answers regarding the definition of EBP. About half of the studied nurses(50,0%) had incomplete correct answers regarding steps of EBP and about half of the studied nurses (50%) had do not know the answer about the importance of EBP application, while more than half of the studied nurses (51.7% and 53.3%) had incomplete correct answer regarding EBP for caring women with preeclampsia and EBP that given for women with preeclampsia respectively. In addition, about two-thirds (65.0%) of them had utterly correct answers regarding EBP to protect women from preeclampsia.

Table 3
Frequency distribution of studied nurses regarding their knowledge about preeclampsia (n=60).

Knowledge items	Complete Correct		Incomplete Correct		I do not know	
	No	%	No	%	No	%
Definition of preeclampsia	41	68.3	19	31.7	0	0.0
Degree of preeclampsia	18	30.0	36	60.0	6	10.0
Risk factor of preeclampsia	22	36.7	38	63.3	0	0.0

signs and symptoms of preeclampsia	45	75.0	15	25.0	0	0.0
Danger signs for women with preeclampsia	43	71.7	17	28.3	0	0.0
Complication of preeclampsia	41	68.3	19	31.7	0	0.0
Diagnosis of preeclampsia	45	75.0	15	25.0	0	0.0
Frequency of visits for women with preeclampsia	18	30.0	41	68.3	1	1.7
Medication that given for women with preeclampsia	16	26.7	44	73.3	0	0.0

Table 3 illustrates that more than two-thirds of the studied nurses (68.3%) had completely correct answers regarding the definition and complications of preeclampsia. About three-quarters (75%) of the nurses studied had complete and correct answers regarding signs and symptoms and the diagnosis of preeclampsia. Less than two-thirds (60.0% and 63.3%) had incomplete correct answers regarding preeclampsia's degree and risk factor, respectively. While more than two-thirds of studied nurses (71.7%) had complete correct answers regarding danger signs for women with preeclampsia. In addition, more than two-thirds of studied nurses(68.3% and 73.3%)had incomplete correct answers regarding the Frequency of visits for women with preeclampsia and the medication that was given to women with preeclampsia, respectively.

Table 4
Mean and standard deviation of total practice score regarding preeclampsia procedure among studied nurses

Total practices items	Min	Max	Mean	±SD
Practical skills during the management of preeclampsia	5	16	10.70	±2.776
Admission procedure	1	3	2.47	±0.791
Infection control standard	4	8	5.92	±1.369
Skill of blood pressure measurement	8	17	13.07	2.991
Practical skill of giving magnesium sulfate	3	7	4.75	±1.271
Assess deep tendon reflex during magnesium sulfate therapy	1	1	1.00	±0.00
Assess pitting edema	4	9	6.66	±1.853
Practical skill of weighing the women	2	5	4.22	±0.852
Test protein urine	3	6	5.05	±0.990
Total	40	64	52.66	±5.52

Table 4 shows that the mean and standard deviation of Practical skills during the management of preeclampsia is 10.70±2.776, while for the Skills of blood pressure measurement, it is 13.07 ± 2.991, and for total practices, it is 52.66±5.52.

Table 5
Correlation matrix between total knowledge, practices, and barriers

variables		total knowledge	total practices	total barrier
total knowledge	R		.128	.036
	p-value		.328	.786
total practices	R	.128		-.038-
	p-value	.328		.775
total barrier	R	.036	-.038-	
	p-value	.786	.775	

Table 5 illustrates a positive correlation between total knowledge and total practices, while there was a negative correlation between total practices and total barriers.

Table 6
Relation between total knowledge level and total practices level among studied nurses

Level of practices	Unsatisfactory (n=21)		Satisfactory	(n=39)	X2	p-value
Level of knowledge	No	%	No	%		
Poor (n=11)	11	52.4	0	0	6.307	0.043*
Average (n=25)	6	28.6	19	48.7		
Good (n=24)	4	19.0	20	51.3		

Table 6 shows a statistically significant relationship between total knowledge level and total practices (p> 0.05).

Table 7
Correlation between total practices, total knowledge about evidence-based practices and total knowledge of preeclampsia

Variables	Total practices	
	R	p-value
Total knowledge about preeclampsia	0.571	0.003*
Total knowledge about evidence-based practices	0.482	0.005*

Table 7 shows a statistically significant positive correlation between total practices, total knowledge about evidence-based practices, and total knowledge of preeclampsia.

Table 8
Correlation between total knowledge about evidence-based practices and total knowledge about preeclampsia

Variables	Total knowledge of evidence-based practices	
	R	p-value
Total knowledge about preeclampsia	0.375	0.003*

Table 8 shows a statistically significant positive correlation between total knowledge about evidence-based practices and total knowledge about preeclampsia.

Discussion

Preeclampsia remains the main threat during pregnancy until now. It is defined as a multi-system disorder of pregnancy characterized by hypertension and proteinuria with or without edema after 20 weeks of gestation (Serban et al., 2018). The current study aimed to assess the application of evidence-based practice for pregnant women with preeclampsia. This aim was achieved through a descriptive study design that answered the research questions about the level of nurses' knowledge about evidence-based nursing practices for preeclampsia, the level of nurses' practice about evidence-based nursing practices for preeclampsia, and barriers to using evidence-based nursing practices.

Total Knowledge Regarding Preeclampsia

Concerning the studied nurses' total knowledge. The current study showed that over one-third of staff nurses had an average total knowledge level. This result agreed with (Ahmed, 2017), who studied "Impact of a Tailored Intensive Educational Program upon Preeclampsia on Nurses' Knowledge" and reported that only ten out of sixty had optimal knowledge. On the opposite, (Angelina et al., 2020), who studied "Knowledge on prevention and management of preeclampsia and eclampsia among nurses in primary health settings," found that (51.2%) had adequate knowledge about preeclampsia. From my point of view, the studied nurses had an average level of total knowledge due to a lack of training programs about preeclampsia.

Knowledge about Evidence-Based Practice

The inclusion of EBP in nursing provides nurses with the scientific research to make well-founded decisions. Through EBP, nurses can stay updated about new medical protocols for patient care. By searching for documented interventions that fit the profiles of their patients, nurses can increase their patients' chances for recovery. EBP enables nurses to evaluate research so they understand the risks or effectiveness of a diagnostic test or treatment. The application of EBP enables nurses to include patients in their care plans. This gives patients a proactive role in their healthcare since they can voice concerns, share their values and preferences, and suggest how they want to proceed (Rasmussen et al., 2018).

General Knowledge Regarding Preeclampsia

The recent study illustrated that more than two-thirds of staff nurses had completely correct answers regarding the definition and complications of preeclampsia. These findings agreed with (Munirathnamma et al., 2013) in the study "Knowledge of Staff Nurses Regarding Management of Pregnancy Induced Hypertension (PIH)," which found that more than half of the studied sample had correct knowledge regarding the definition of pregnancy toxemia.

The present study clarified that less than two-thirds of the studied sample had incomplete correct answers regarding the degree and risk factors of preeclampsia. This result disagreed with Zahran et al. (2018), whose study, titled "Nurses' Practical Skills Provided for Mothers with Toxemia of Pregnancy," found that more than two-thirds had satisfactory knowledge about the risk factors of toxemia.

Conclusion

Most of the studied nurses had an average level of total knowledge regarding preeclampsia and EBP. Less than two-thirds of the nurses studied had satisfactory total practice regarding preeclampsia. More than half of the studied nurses were highly aware of barriers to EBP. Moreover, a statistically significant relation existed between total knowledge level and total practices. Meanwhile, there was a statistically significant positive correlation between total practices, knowledge about evidence-based practices, and knowledge of preeclampsia. Also, there was a statistically significant positive correlation between total knowledge about evidence-based practices and total knowledge about preeclampsia. The above-mentioned findings answered the study questions.

Recommendations

- Developing continuous educational programs for nurses in the obstetrics and gynecology department to enhance their knowledge and practices regarding care with preeclampsia.

- Improving nurses' awareness regarding EBP by involving them in educational programs to encourage them to incorporate EBP into patient daily care.

- Integrate the guidelines to undergraduate curriculum students' nurses to be further applied into their practice after graduation.

- Disseminate the guidelines for all maternity and maternal child health care services.

References

Adebayo & Adeoye. (2022). Knowledge and skills of pre-eclampsia management among healthcare providers working in antenatal clinics in Zanzibar. *BMC Health Services Research, 22(1), 1-12.*

Al-Mutairi, & Bello. (2020). Pre-eclampsia knowledge and practice among nurses: A systematic review. *Journal of Clinical Nursing, 29(11-12), 1731-1742.*

Angelina, J. A., Kibusi, S. M., Mwampagatwa, I., & Ernest, A. (2020). Knowledge on prevention and management of preeclampsia and eclampsia among nurses in primary health settings: baseline findings from an interventional study in Dodoma Region, Tanzania. *EA Health Research Journal, 4(1), 33-40.*

Ellboudy, D., Eid, N., & Rashad, Z. (2018). Nurse Managers' Perceived Knowledge and Skills Regarding Evidence-Based Nursing Practice. *Menoufia Nursing Journal, 3(2), 27-34.*

Munirathnamma, M., and Lakshmamma, T., (2013).Knowledge of staff nurses regarding management of pregnancy induced hypertension (PIH). *International Journal of Humanities and Social Science Invention, 2(11): 8-12.*

Oche, & Adamu. (2019). Knowledge and practice of pre-eclampsia management among midwives in Nigeria. *International Journal of Nursing and Midwifery, 11(2), 1-8.*

Rasmussen, C. D. N., Højberg, H., Bengtsen, E., & Jørgensen, M. B. (2018). Identifying knowledge gaps between practice and research for implementation components of sustainable interventions to improve the working environment–A rapid review. *Applied ergonomics, 67: 178-192.*

Serban D., Crisan C., Serban C., Serbu I.B.M., Kundani N., Poroch V., Sharma A., Buciu V., Horhat L.D., Sas I., Biris M., and Ratiu A., (2018). Effects of Acetylsalicylic Acid in Preterm Preeclampsia Prevention, *Revista de Chimie (Bucharest), 69 (5), 1203.*

Shah, & Kulkarni. (2018). Pre-eclampsia knowledge and practice among nurses in India. *Journal of Nursing Education and Practice, 8(12), 1-8.*

Tabatabaeian M., Kordi M., Dadgar S., Esmaeily H., and Khadivzadeh T., (2018). Comparing the effects of simulation-based training, blended, and lecture on the simulated performance of midwives in preeclampsia and eclampsia, *Journal of Education and Health Promotion, 7(110), 112-121.*

Thilaganathan, B., & Kalafat, E. (2019). Cardiovascular system in preeclampsia and beyond. *Hypertension, 73(3), 522-531.*

Zhran, F., R Aboshabana, K., & M Emam, A. (2018). Nurses' practical skills provided for mother With Toxemia of Pregnancy. *Egyptian Journal of Health Care, 9(1), 25-37.*